

appended claims.

This application claims priority from Japanese Patent Application No. 2003-313079 filed on September 4, 2003, which is hereby incorporated by reference herein.

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CLAIM OF PRIORITY

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CLAIMS

1. A storage device comprising a cartridge having a storage medium and a holder portion in which said cartridge is detachably loaded, said holder
5 portion being capable of being loaded with a plurality of types of cartridges having different lengths in an inserting/removing direction, wherein

said holder portion includes:

a locking portion which is disposed at a first
10 distance in the inserting/removing direction of said cartridge from an insertion port of said cartridge, and releasably locks said cartridge, and

a positioning member which is provided to be movable in the inserting/removing direction of said
15 cartridge, and determines a leading end position in an inserting direction of said cartridge, and

said cartridge includes

an engaging portion which is disposed at a second distance in the inserting/removing direction of said
20 cartridge from a trailing end in the inserting direction of said cartridge, and engages with said locking portion,

the second distance being common among said plurality of types of cartridges.

25 2. The storage device according to claim 1, wherein the first and second distances are substantially the same.

3. The storage device according to claim 1, further comprising an elastic member which constantly biases said positioning member toward the insertion port of said cartridge.

5 4. A storage device comprising a cartridge having a storage medium and a holder portion in which said cartridge is detachably loaded, said holder portion being capable of being loaded with a plurality of types of cartridges having different lengths in an
10 inserting/removing direction, wherein

 said holder portion includes

 a positioning member which determines a leading end position in an inserting direction of said cartridge, and

15 a locking portion which is disposed at a first distance in the inserting/removing direction of said cartridge from said positioning member, and releasably locks said cartridge, and

 said cartridge includes

20 an engaging portion which is disposed at a second distance in the inserting/removing direction of said cartridge from a leading end in the inserting direction of said cartridge, and engages with said locking portion,

25 the second distance being common among said plurality of types of cartridges.

5. The storage device according to claim 1,

wherein

said cartridge includes a first electrical connecting portion at said leading end portion in the inserting direction thereof, and

5 said holder portion has a second electrical connecting portion which is arranged at said positioning member and is connected to said first electrical connecting portion.

6. The storage device according to claim 4,
10 wherein

said cartridge includes a first electrical connecting portion at said leading end portion in the inserting direction thereof, and

15 said holder portion has a second electrical connecting portion which is arranged at said positioning member and is connected to said first electrical connecting portion.

7. The storage device according to claim 1,
wherein

20 said cartridge has a guide groove extending in the inserting/removing direction thereof, and

said holder portion has a guide piece which engages with the guide groove.

8. The storage device according to claim 4,
25 wherein

said cartridge has a guide groove extending in the inserting/removing direction thereof, and

said holder portion has a guide piece which engages with the guide groove.

9. The storage device according to claim 7,
wherein said engaging portion is a groove intersecting
5 the guide groove.

10. The storage device according to claim 8,
wherein said engaging portion is a groove intersecting
the guide groove.

11. The storage device according to claim 1,
10 wherein the storage device is an external storage
device for a computer.

12. The storage device according to claim 4,
wherein the storage device is an external storage
device for a computer.

13. The storage device according to claim 1,
15 wherein the storage device is a storage device
incorporated in a computer.

14. The storage device according to claim 4,
wherein the storage device is a storage device
20 incorporated in a computer.

15. A cartridge which is detachably loaded in a
holder portion in a storage device outside a computer
or a storage device incorporated in a computer and has
a storage medium, comprising

25 an engaging portion which engages with a locking
portion provided to said holder portion to releasably
lock said cartridge, and is arranged at a predetermined

distance in an inserting/removing direction from an end of said cartridge,

the predetermined distance being set common for another cartridge which is detachably loaded in said holder portion and has a length different from that of
5 said cartridge in the inserting/removing direction.

16. A cartridge manufacturing method of manufacturing a plurality of cartridges which are detachably loaded in a holder portion for a storage
10 device outside a computer or a storage device incorporated in a computer and have a storage media, the cartridges having different lengths in an inserting/removing direction, comprising

providing an engaging portion at a predetermined
15 distance in the inserting/removing direction from an end of the cartridge, the engaging portion engaging with a locking portion provided to the holder portion to releasably lock the cartridge, and

setting the predetermined distance common among
20 the plurality of types of cartridges.

17. The cartridge manufacturing method according to claim 16, wherein

the plurality of types of cartridges include a first cartridge, and a second cartridge which is longer
25 than the first cartridge in the inserting/removing direction and has first and second engaging portions as the engaging portion,

regarding the first cartridge, the engaging portion is provided at a first distance from one end portion of the first cartridge and at a second distance from the other end of the first cartridge, and

5 regarding the second cartridge, the first engaging portion is provided at the first distance from one end portion of the second cartridge, and the second engaging portion is provided at the second distance from the other end portion of the second cartridge.

10 18. A storage device comprising a holder portion in which a cartridge having a storage medium is detachably loaded, said holder portion being capable of being loaded with a plurality of types of cartridges having different lengths in an inserting/removing
15 direction, the cartridges including engaging portions disposed at a predetermined distance in the inserting/removing direction from a trailing end in an inserting direction of the cartridge, wherein.

 said holder portion includes

20 a locking portion which is disposed at a predetermined distance in the inserting/removing direction of the cartridge from an insertion port of the cartridge, and engages with the engaging portion to releasably lock the cartridge, and

25 a positioning member which is provided to be movable in the inserting/removing direction of the cartridge, and determines a leading end position in an

inserting direction of the cartridge.

19. A storage device comprising a holder portion in which a cartridge having a storage medium is detachably loaded, said holder portion being capable of being loaded with a plurality of types of cartridges having different lengths in an inserting/removing direction, the cartridges including engaging portions disposed at a predetermined distance in the inserting/removing direction from a leading end in the inserting/removing direction of the cartridge, wherein said holder portion includes
- a positioning member which determines a leading end position in an inserting direction of the cartridge, and
 - a locking portion which is disposed at a predetermined distance in the inserting/removing direction of the cartridge from said positioning member, and engages with the engaging portion to releasably lock the cartridge.